

Application No. 10/578,171  
Amendment Dated: January 2, 2009  
Reply to Office Action of: December 1, 2008

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

Claim 1 (Original) An artificial tissue system, comprising:

- (a) a matrix configured for biological contact with an implantable device, and
- (b) a plurality of cells supported by said matrix, said cells promoting a biological interaction between said implantable device and a biological system.

Claim 2 (Original) The artificial tissue system of claim 1, wherein said cells include at least one member selected from the group consisting of biological cells, engineered cells, support cells, stem cells, artificial cells and hybrid cells.

Claim 3 (Previously Presented) The artificial tissue system of claim 1, wherein said cells promote biocompatibility between said implantable device and said biological system.

Claim 4 (Previously Presented) The artificial tissue system of claim 1, wherein said cells enhance the lifespan and/or the function of said implantable device.

Claims 5-8 (Canceled)

Claim 9 (Original) The artificial tissue system of claim 1, wherein said biological system comprises a mammal.

Claims 10-13 (Canceled)

Claim 14 (Previously Presented) The artificial tissue system of claim 1, wherein said implantable device is a sensor.

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**Claim 15 (Original)** The artificial tissue system of claim 14, wherein said sensor is a glucose sensor.

**Claim 16 (Previously Presented)** The artificial tissue system of claim 1, wherein said matrix is configured to at least partially embed said implantable device.

**Claims 17-18 (Canceled)**

**Claim 19 (Previously Presented)** The artificial tissue system of claim 1, wherein said cells are configured to suppress deleterious reactions between said implantable device and said biological system and/or said artificial tissue system.

**Claim 20 (Previously Presented)** The artificial tissue system of claim 1, wherein said matrix comprises at least one member selected from the group consisting of biological matrices, engineered matrices, synthetic matrices, and hybrid matrices.

**Claims 21-24 (Canceled)**

**Claim 25 (Previously Presented)** The artificial tissue system of claim 1, wherein said system further comprises a support system and/or a delivery system comprising a gel, a paste and/or a polymer.

**Claim 26 (Canceled)**

**Claim 27 (Previously Presented)** An implant comprising an implantable device in biological contact with the artificial tissue system of claim 1.

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Claim 28 (Original) An implant system comprising:

- (a) an implantable device,
- (b) a matrix in biological contact with said implantable device, and
- (c) a plurality of cells supported by said matrix, said cells promoting a biological interaction between said implantable device and a biological system.

Claims 29-36 (Canceled)

Claim 37 (Original) An artificial implant system in biological contact with a biological system comprising:

- (a) a cellular component, said cellular component includes at least one cellular community which induces a biological response in the biological system;
- (b) a matrix material, said matrix material being associated with a portion of the cellular community; and
- (c) an implant device having a biological interface wherein said biological interface is associated with the matrix material and the biological system.

Claim 38 (Original) The artificial implant system in biological contact with a biological system of claim 37, wherein the biological response includes neovascularization.

Claim 39 (Previously Presented) The artificial implant system in biological contact with a biological system of claim 37, wherein the biological system is a mammal.

Claims 40-50 (Canceled)

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**Claim 51 (Previously Presented)** The artificial tissue system of claim 1, wherein the matrix comprises a gel.

**Claim 52 (Original)** The implant system of claim 28, wherein the matrix comprises a gel.

**Claim 53 (Canceled)**

**Claim 54 (Previously Presented)** The artificial implant system of claim 37, wherein the matrix material comprises a gel.

**Claims 55-58 (Canceled)**

**Claim 59 (Previously Presented)** The artificial implant system of claim 37, wherein the biological response includes inhibition of at least one of inflammation and fibrosis.

**Claims 60-65 (Canceled)**

**Claim 66 (Previously Presented)** The implant system of claim 28, further comprising a subsystem configured to test the effectiveness of the artificial tissue system in extending the life of the implant.

**Claim 67 (Previously Presented)** The implant system of claim 28, wherein at least a portion of the plurality of cells promote biocompatibility of the implantable device with the biological system.

**Claim 68 (Previously Presented)** The implant system of claim 67, wherein the implantable device comprises a sensor.

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Claim 69 (Previously Presented) The implant system of claim 68, wherein the matrix comprises a gel.

Claim 70 (Previously Presented) The artificial tissue system of claim 1, wherein said cells

induce the growth of biological tissue in and/or between said biological system and/or said artificial tissue system.

Claim 71 (Previously Presented) The artificial tissue system of claim 70, wherein said biological tissue comprises vascular structures.

Claim 72 (Previously Presented) The artificial tissue system of claim 1, wherein said artificial tissue system further comprises at least one genetic element supported by said matrix.

Claim 73 (Previously Presented) The artificial tissue system of claim 1, wherein said artificial tissue system further comprises at least one response modifier supported by said matrix.

Claim 74 (Previously Presented) The artificial implant system in biological contact with a biological system of claim 37, wherein the biological response includes neovascularization.

Claim 75 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 37, wherein the combination of the matrix material and cellular component includes at least one member selected from the group consisting of basement membrane and normal vascular stem cells; (basement membrane and cytokines bound to basement membrane) and normal vascular stem cells; basement membrane and normal vascular stem cells and

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engineered support cells; basement membrane and normal vascular stem cells and engineered stem cells; (basement membrane and cytokines bound to the basement membrane) and normal vascular stem cells and engineered support cells; or (basement membrane and cytokines bound to the basement membrane) and normal vascular stem cells and engineered stem cells.